

Figure 1 Front View, Model TIS-3

The TMC Model TIS-3 is a voice telegraph system which allows a single channel radio teletype signal and a single channel CW signal to be placed on either sideband of a single sideband transmitter.

The Model TIS-3 is identical to the Model TIS-2 except that the tones (1575 and 2425 cps) have been allocated to allow transmitting and receiving systems using 1 kc incremental tuning to be received in standard FSK operating network, using 425 cps shift, with conventional FSK receiving terminal equipments such as the TMC Model CFA (CV-763/URR) or the AN/URA-8 without the need for retuning the receiver.

The system is designed to be used with any type of terminal equipment which provides intelligence in an on/off keyed form. This intelligence is converted into a keyed tone in the Model TTU. The frequency determining element in the TTU-4 is a self-contained, extremely stable plug-in device. Electronically, the TTU unit converts on/off current or contact pulses into an equivalent tone. The resultant envelope is free from transients and the steepness of the original modulating rectangular pulse is retained.

The frequency shift is achieved by mixing the output of a crystal oscillator with a reactance push-pull oscillator. The 200 kc oven has a fast heating characteristic so that the frequency may be stable within approximately 30 minutes after a cold start.

The outputs from the TTU unit are combined in the TTF unit into composite for transmission and to give a 600 ohm output, either balanced or unbalanced.

The application of the Model TIS-3 to a single sideband transmitter is shown below.

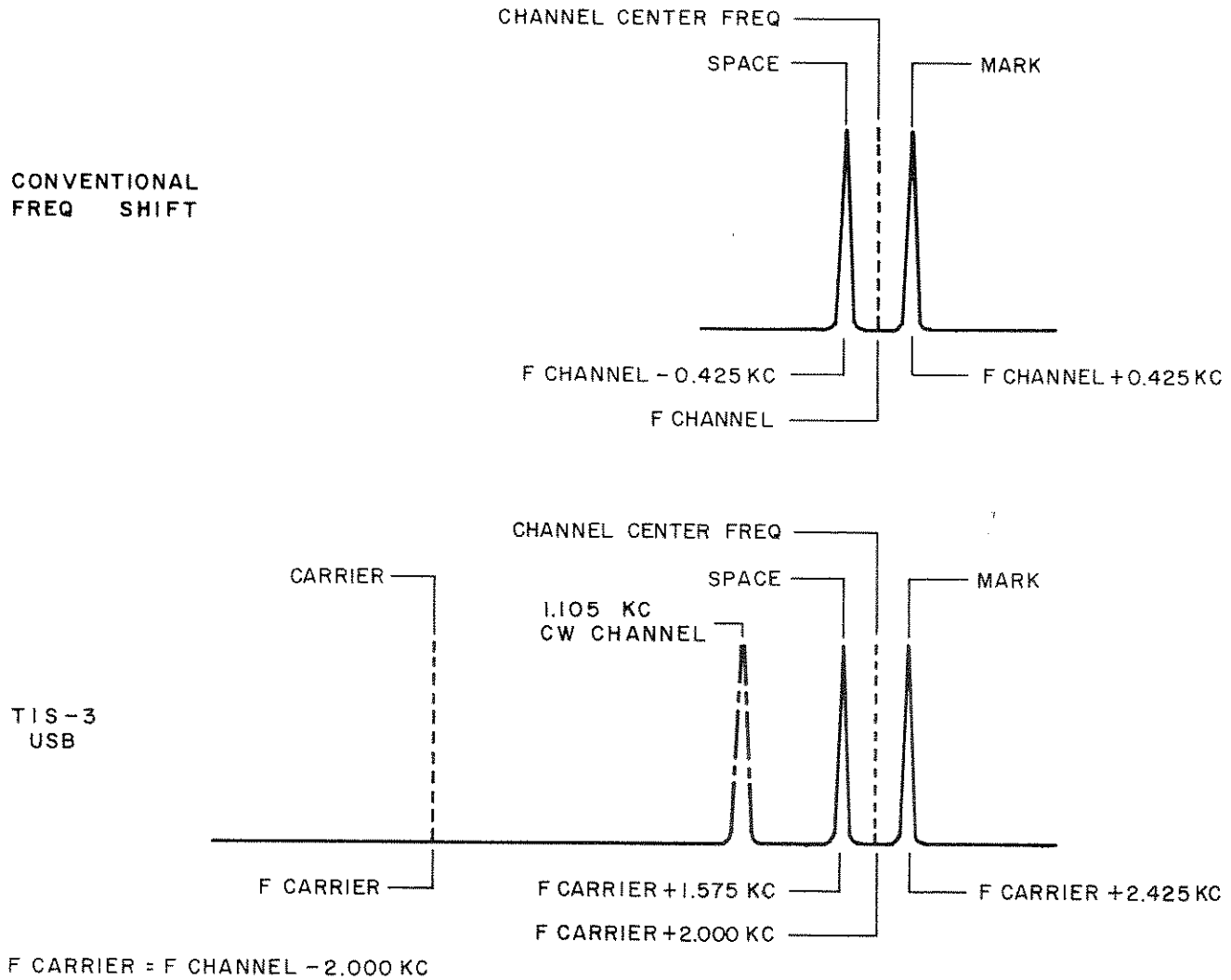


Figure 2

## TECHNICAL SPECIFICATIONS:

### MODEL TTU-4 TONE TRANSMIT UNIT

KEYING SPEED:	Up to 500 w.p.m.
KEYING INPUTS:	1. Polar or neutral, either side 2. Contact keying to ground.
INPUT IMPEDANCE:	330 to 2800 ohms, adjustable
TONE CARRIER FREQUENCY:	1105 cps.
FREQUENCY STABILITY:	Virtually no drift over normal operating range.
OUTPUT LEVEL:	Continuously adjustable from 0 to 1 volt.
CONTROLS:	1. Output Control 2. Input loop control

### MODEL TTU - 3 FREQUENCY SHIFT TRANSMIT UNIT

FREQUENCY SHIFT:	$\pm 425$ cps.
KEYING SPEED:	Up to 1000 w.p.m.
KEYING INPUTS:	1. Polar or neutral keying, either side grounded. 2. Contact keying to ground.
INPUT IMPEDANCE:	330 to 2800 ohms, adjustable.
FREQUENCY STABILITY:	1. 10 cps for ambient temperature change of 0 to 50 degrees C. 2. 10 cps for line voltage change of 10%. 3. No drift for input signal variations of + 25 volts to + 150 volts (mark frequency).
OUTPUT LEVEL:	Continuously adjustable from 0 to .25 volts.
CONTROLS:	1. Output control. 2. Input loop control. 3. Frequency shift control.

### MODEL TTF TRANSMIT FILTER PANEL (Channel 3)

TONE CARRIER FREQUENCY:	1125 cps.
KEYING SPEED:	60 w.p.m. (Channel 1)
CENTER FREQUENCY:	2000 cps.

FREQUENCY SHIFT:  $\pm 425$  cps.  
LINE TERMINATION: Both channels are matched through a resistive pad into a 600 ohm balanced or unbalanced line.  
DIMENSIONS: 3 1/2 inches high x 10 inches deep x 19 inches wide.  
WEIGHT: 8 pounds net

MODEL TST TONE SYSTEM POWER SUPPLY

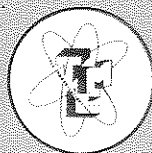
POWER REQUIREMENTS: 115/230 volts, 50-60 cps, 170 watts  
CONTROLS: 1. Power switch, channel 1.  
2. Power switch, channel 3.  
DIMENSIONS: 5 1/4 inches high x 15 inches deep x 19 inches wide.  
WEIGHT: 26 pounds (with both TTU units installed)

THE TECHNICAL MATERIEL CORPORATION

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